

REMARKS

Claims 1-20 are pending in this application. By this Amendment, claims 1-14 have been amended and claims 15-20 added. In addition, the specification is amended to correct minor informalities found therein.

In paragraph 14, on page 7 of the Office Action, claims 8, 9 and 12 were indicated as allowable if rewritten to overcome the rejections under 35 U.S.C. §112, second paragraph and to include all of the features of the base claim and any intervening claims. Applicants appreciate this indication of allowable subject matter but submit that claim 1, the claim from which the allowable claims depend, is allowable for the reasons to be discussed below.

In paragraph 1, on page 2 of the Office Action, the drawings were objected to under 37 C.F.R. §1.83(a) alleging that the reception means of claim 9 must be shown or canceled from the claims. Applicants submit no correction is needed for the drawings. Fig. 8 shows a bag 39 which constitutes the reception means. As to the storage means of claim 8, it is shown by reference number 13 found in Fig. 3. Thus, all claimed elements are clearly shown in the drawings.

In paragraph 3, claims 5-9 and 12 were rejected under 35 U.S.C. §112, first paragraph as allegedly failing to comply with a written description requirement. Specifically, it was alleged that in claim 5 the written description does not explain nor do the drawings illustrate how the calibrated sealing organ interacts with the left trunnion as claimed. In paragraph 4, the same claims were rejected for failing to comply with the enablement requirement. Both rejections are traversed.

The subject matter of claim 5 is described on page 7, lines 7-25. Further, this feature is clearly shown in Figs. 6, 7 and 8. For those skilled in the art there is more than adequate written description and the description is fully enabled.

In paragraph 5, on page 3 of the Office Action, claims 2-9 and 11-14 were rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specific language in claims 2, 7, 12 and 13 was identified as forming the basis for the rejection. The claims have been amended responsive to the rejection except for claim 13.

Medium calibre (English spelling) is well understood by those skilled in the art. In fact, one of the references applied in the Office Action, that to Siech et al., U.S. Patent No. 4,777,864, provides an example of the knowledge of those skilled in the art in defining such calibers. Siech addresses large caliber and defines those as 75 mm and larger (col. 1, lines 51 and 52). The reference notes intermediate, or medium, caliber weapons are approximately 20-40 mm (col. 1, lines 41 and 42) and identifies small guns, such as small arms or machine guns (col. 1, lines 27-29). A visit to the Tank-Automotive and Armaments Command of the U.S. Army, U.S. Army Armament Research Development and Engineering Center web site (www.pica.army.mil) indicates that the small caliber ammunition group includes ammunition items such as 5.56 mm, 7.62 mm, caliber 50, caliber 45 and shotgun ammunition and then provides a long list of personal defense weapons, rifle and sniper weapons, machine guns and some small crew-served weapons, as well as training ammunition. The same site, when looking for medium caliber ammunition defines weapons such as 20-40 mm. As the U.S. Army, to best of Applicants' representative's knowledge, does not have any weapons in the 75 mm range today, large caliber weapons would be defined as 81 mm and up.

Although the U.S. Army does not have official definitions of small, medium and large calibers, the terms are understood by members of the Army substantially as defined by Siech et al. and as broken down by the Tank-Automotive and Armaments Command. All of these definitions are consistent with the definition used by Applicants in their specification indicating medium caliber and specifically including a 40 mm gun within that category. As

such, to those skilled in the art, there is nothing indefinite about the definition of medium caliber. Therefore, it is respectfully requested that the rejection under 35 U.S.C. §112, second paragraph be withdrawn.

In paragraph 7, on page 4 of the Office Action, claims 1-3 and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Zielinski, U.S. Patent No. 5,945,625, in view of Ingestrand, U.S. Patent No. 4,352,315. The rejection is respectfully traversed.

Applicants' claim 1 calls for a turret for a military vehicle, the turret mobile in traverse with respect to the vehicle, comprising an oscillating mass comprising a cannon oriented in elevation; and a linking interface used to mount the oscillating mass in the turret, the linking interface ensuring air-tightness with respect to the exterior of the turret, wherein the linking interface includes an airtight caisson insulating the turret with respect to the exterior, the caisson being mobile in elevation in the turret. Neither Zielinski nor Ingestrand, nor any combination of the two, disclose such a structure.

Both Zielinski and Ingestrand deal with seals around a gun tube where the gun extends out of the turret. As admitted in the Office Action, Zielinski does not teach an airtight interface at that point and Ingestrand is applied for teaching such. However, Ingestrand is not directed to providing an airtight aperture slot rather one that protects from the elements, such as cold or rain. Ingestrand has a slot aperture for elevation and depression of the gun and a bellows type seal that spreads apart as the gun is elevated and depressed. To minimize the open area of the slot, as the seal cannot possibly seal tightly immediately above and below the gun barrel, Ingestrand provides a protective plate that covers this opening. As can be seen in Fig. 4, there are gaps between the protective plate and the bellows (providing the seal) and the side edges of the plate. Thus, one must surmise gaps would also occur at the top and bottom edges and air could easily enter into the vehicle. The sole purpose of the seal is to minimize, or prevent, the entry of water, moisture or cold or excessive heat through the slot itself. There

is no caisson. Further, there is no caisson in Zielinski, let alone an airtight caisson, as found in Applicants' claim. As such, the two references do not suggest the claimed invention and it is respectfully requested the rejection be withdrawn.

In paragraph 8, on page 4 of the Office Action, claim 14 was rejected under 35 U.S.C. §103(a) as being unpatentable over Zielinski in view of Ingestrand and further in view of Siech et al., U.S. Patent No. 4,777,864 (Siech). The rejection is respectfully traversed.

Siech is applied for allegedly teaching a gun or cannon that is a 40 mm gun or cannon. Siech does not do so. Siech defines a 40 mm cannon as falling in the medium caliber range, as discussed above, but is directed to a 75 mm gun or larger and automating the loading of such a gun (col. 1, line 51 - col. 2, line 4; col. 2, line 67 - col. 3, line 32). Further, Siech does not overcome the deficiencies of Zielinski and Ingestrand with respect to claim 1. Thus, Siech does not, in combination, suggest the subject matter of claim 1 and could not possibly suggest the subject matter of claim 14. It is respectfully requested the rejection be withdrawn.

In paragraph 9, on page 5 of the Office Action, claims 4, 5 and 11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Zielinski in view of Ingestrand and further in view of Sanderson, U.S. Patent No. 6,286,411. The rejection is respectfully traversed.

First, Sanderson is directed to a machine gun. Machine guns are small caliber weapons. Further, generally speaking, machine guns are not mounted on trunnions, rather they are mounted on pintles. A trunnion is defined as a pin or gudgeon, esp., either of two small cylindrical projections on a cannon forming an axis on which it pivots and a pintle is defined as the pin on a gun carriage according to the American Heritage Dictionary, Second College Edition. A search of terms on the Internet found that a trunnion was generally defined as a cylindrical projection on each side of a piece, whether gun, mortar, or howitzer, serving to support it on the cheeks of the carriage. The source of that specific definition is

from the 1913 Webster's Dictionary. A pintle was defined, on the Internet, as a pin or bolt for performing the pivot of a hinge.

In any case, what is disclosed in Sanderson is a pintle support structure (Abstract). The fact that the pintle is hollow does not suggest a trunnion being hollow as a pintle is normally oriented vertically, as is the case in Sanderson, and thus has its greatest strength in the cylindrical direction or vertically. A trunnion, on the other hand, is normally oriented horizontally and the greatest strength of the cylinder is not through its diameter which is the way it supports a cannon. As such, a hollow pintle does not suggest a hollow trunnion. Thus, Sanderson does not suggest the subject matter of claims 4, 5 or 11. As Sanderson does not overcome the deficiencies of Zielinski and Ingestrand with respect to claim 1, it most certainly does not suggest the subject matter of claims 4, 5 and 11. It is respectfully requested the rejection be withdrawn.

In paragraph 10, on page 5 of the Office Action, claims 6 and 7 were rejected under 35 U.S.C. §103(a) as being unpatentable over Zielinski in view of Ingestrand and Sanderson and further in view of Flemming et al., U.S. Patent No. 4,088,058 (Flemming). The rejection is respectfully traversed.

Flemming is directed to a sealing system for the turret of a tank. In particular, Flemming discloses a seal ring that is inflated, by a control system, to close the gap between the chassis and the turret and a second seal system for closing the vent system into the turret when the vehicle is operating to either ford a water obstacle or in a hostile atmosphere. To do so, compressed air is applied to various seals to force the seals into closing positions creating a sealed turret (col. 3, lines 8-12). Flemming says nothing about a non-return valve communicating with the exterior and allowing the pressure level inside the caisson to be adjusted as it does not discuss a caisson, rather it discusses solely the interior of a turret. Further, there is nothing in Flemming concerning trunnions that have an internal diameter that

is sufficient to allow passage for the ammunition cases and their evacuation outside of the turret. Lastly, Flemming does not teach an air pressure no return valve in the Abstract. What Flemming teaches is there is a ventilation aperture. The discussion in Flemming talks about closing the ventilation aperture under the conditions of fording a water obstacle and/or in a hostile environment. As such, Flemming not only does not teach what is applied for teaching, it certainly does not apply to the subject matter of Applicants' claims 6 and 7 and thus Flemming cannot suggest the subject matter of claims 6 and 7. Further, Flemming does not overcome the deficiencies of Zielinski and Ingestrand with respect to claim 1 and, for that reason, cannot suggest the subject matter of claims 6 and 7. As such, it is respectfully requested the rejection be withdrawn.

In paragraph 12, on page 6 of the Office Action, claims 1-3 and 13 were rejected under 35 U.S.C. §102(b) as anticipated by Koontz. The rejection is respectfully traversed.

Claim 1 has been described above. Koontz also deals with providing a seal for a gun slot in a turret rubber mounting, the slot extending in a vertical direction. The Koontz solution is a pair of opposing side closures having a curvilinear structure that meet at a center line along which the gun tube passes. Each of these structures is made up of a plurality of flexible fingers.

Also mounted to the gun tube is a cam 46 and a splash boot 56. The device of Koontz thus is similar to that of Ingestrand although it may provide a better seal where the gun tube extends through the slot. However, it is again intended to prevent weather from penetrating into the interior of the turret through the slot. There is no discussion that it is air-tight, or it is a linking interface, and there is certainly no discussion of a caisson. Further, there is no showing or discussion of left and right trunnions as found in claim 3. As such, Koontz does not literally disclose the claimed invention and a rejection under 35 U.S.C. §102 is

inappropriate. Further, for the foregoing reasons, Koontz does not suggest the claimed invention.

In paragraph 13, on page 6 of the Office Action, claim 10 was rejected under 35 U.S.C. §103(a) as being unpatentable over Koontz in view of Flemming. The rejection is respectfully traversed.

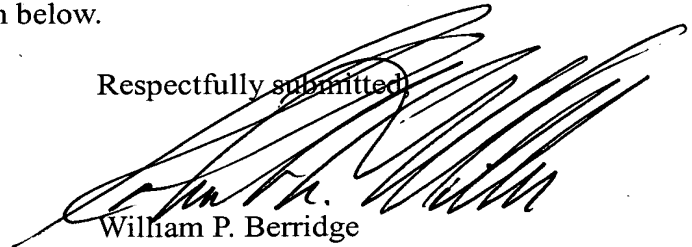
Flemming says nothing about creating an overpressure. In fact, all Flemming discusses is how to seal the turret from the exterior. Any pressure applied is applied only to the seal mechanisms. Thus, Flemming does not suggest the subject matter of claim 10. Further, Flemming does not overcome the deficiencies of Koontz with respect to claim 1 and thus the combination cannot suggest the subject matter of claim 10. Therefore, it is respectfully requested the rejection be withdrawn.

Further, the references neither singly nor in combination anticipate or suggest the subject matter of added claims 15-20.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-20 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted



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